

## INTEGRATION OF ICTS IN HIGHER EDUCATION

### TO PROMOTE STUDENTS' LEARNING

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#### ABSTRACT

*The prime concern of the study was to identify the attitudes and skills of the teachers towards the integration of ICT in teaching learning process and to identify the major hindering and the supporting factors in the integration of ICT in teaching learning process. And, the study also aimed to compare the attitudes and skills of the teachers towards the integration of the ICT in teaching learning process with respect to the teaching experience of the teachers. A sample of 100 teachers in Kathmandu valley who were teaching in higher level was selected.*

*The result of the study indicated that majority of the teachers were found positive towards the integration of ICT in higher level to promote the student learning. And also, it was concluded that most of the teachers were able to use ICTs tools as their medium of instruction in any way. Further, the study also suggested us to arrange proper technical, physical and financial support by making the formal plan and policy to create the environment of integrating ICT in higher level.*

**KEYWORDS:** Attitudes, Skills, ICT, Teaching Experiences, Facilitate and Hinder

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#### INTRODUCTION

ICT originally is applied to serve as a means of improving efficiency in the educational process (Jones and Knezek, 1993). Furthermore, it has been shown that the use of ICT in education can help to improve memory retention, increase motivation and generally deepen understanding (Dede, 1998).

The introduction of Information and Communication Technology (ICT) into the mainstream of university has been widely accepted and now is penetrating and transforming teaching and learning across the curriculum. ICT is not only the backbone of the information society, but is also presented as an important catalyst for inducing educational reforms that change our students into productive knowledge workers.

Even though the integration of ICT tools in higher education is widely accepted, in the context of Nepal, there are so many barriers for its proper implementation. These might be lack of willingness, lack of access to ICT tools, technical problems like not having skills, electricity problems, academic problems etc. Therefore, in this scenario, the present study tried to examine the attitudes and skills of teachers towards the use of ICT tools as well as its supporting and hindering factors for its proper implementation in teaching learning environment.

#### Statement of the Problem

ICTs are now acknowledged as integral component to primary, secondary, higher secondary and university level education system. The Department of Education has not properly yet included ICT in education.

ICT will be emphasizing in creating new ways of learning and it has the potential to enhance the management and administrative capacity of University.

An indication is that the successful integration of ICTs into universities education system can only be realized by the attitudes of the related teachers and their skills. Also, for the better implementation of the ICTs, it is necessary to know its hindering factors and as well as its supporting factors. What attitudes do the majority of the teachers hold about the integration of ICT in higher education with their skills to use such tools? What major factor is existing as the barrier for the proper integration of the ICT in higher education with its supporting factors? And finally to check whether significant difference can be found or not about the attitudes and skills of the teachers with respect to their teaching experiences. These were considered as the major problems the study.

## OBJECTIVE OF THE STUDY

This research was guided by four main objectives:

- To identify the attitudes of the teachers towards the integration of ICT in teaching learning process.
- To identify the skill of the teachers in the use of ICT in teaching learning process.
- To identify the major hindering and the supporting factors in the integration of ICT in teaching learning process.
- To compare the attitudes and skills of the teachers towards the integration of the ICT in teaching learning process with respect to the teaching experience of the teachers.

## HYPOTHESIS OF THE STUDY

The statistical hypotheses were as follows:

**H<sub>0</sub>:** There is no significant difference between the attitudes of the teachers with respect to their teaching experience.

**H<sub>0</sub>:** There is no significant difference between the skills of the teachers with respect to their teaching experience.

## REVIEW OF LITERATURE

The success of any program to implement technology in an educational programme depends strongly upon the support and attitudes of teacher educators involved. It is suggested that if teachers believe or perceive that proposed ICT programme will not fulfill their own or their students' needs, they are not likely to attempt to introduce technology into their teaching and learning. Among the factors that affect the successful use of computers in the classroom are teachers' attitudes towards ICT (Huang and Liaw, 2005).

### Need for Integration of ICT

Development in ICT has affected all sectors of society, including the education sector and especially education curricula. Like their colleagues in other countries, Nepali educationalists recognize the importance of ICT in the knowledge society (Wagly, 2013). Numerous authors argue that the integration of new technologies into education can improve students' learning (Bigum, 2003; Lankshear & Knobel, 2003; Gilbert, 2005). Khine and Fisher (2003) discuss how the introduction of integrated ICT in education has led many educators to improve the way they teach and structure their pedagogy.

Many academicians argue that frequent use of digital technologies has the potential to empower university students to develop new ways of thinking, being, and acting in the world, and to gain learning goals that people in industrial generations may not have been able to achieve (Khine & Fisher, 2003). Harrison (2005) mentions that students use ICT to plan and build models, and use the Internet to bring a new dimension to their learning. By using software and the Internet, students manage and reduce the time typically given to design a prototype. Also, students test out their ideas in a flexible way. Thus ICT can be used in technology pedagogy to find things out, develop ideas, make things happen, exchange and share information, and review and modify products (Harrison, 2005). In the context of Nepal, the government's vision (2013-2017) has been well expressed: one of our key education priorities is to build an education system that will equip 21st century skills. ICT is an incredible tool for learning, and ICT skills are essential for work and for life in the modern world. We want everyone to have the ability to connect safely and securely, taking advantage of the vast online opportunities that exist. ICT is therefore now more prominent in the curriculum.

### **Teachers' Perspectives**

Hennessy et al. (2005) found that lecturers did change their pedagogy and committed to ICT integration in their classrooms despite the difficulties of doing so (like the lack of adequate access to technology, experience, and confidence). Teachers choose ICT applications and approaches to suit their own perspectives on teaching and learning methods (Niederhauser and Stoddart, 2001). In order to integrate ICT effectively into their pedagogy, teachers need both the commitment and the professional knowledge to do so (Finger et al. 2007).

Attwell and Battle (1999) examined the relationship between having a home computer and school performance, for a sample of approximately 64,300 students in the United States. Their findings suggest that the students, who have access to a computer at home for educational purposes, have improved scores in reading skill and studying maths.

### **Attempts to Integrate ICT into the Nepali Education System to Date**

Over the last few years there has been much public discussion on bringing Nepal's educational system into the digital age. In the Ministry of Education ICT Strategic Framework for Education (2013-2017), it is stated: effective use of ICT has the potential to bring about improvements in educational outcomes for all 21st century learners. To achieve this, however, it is vital that ICT becomes better integrated with teaching and learning. Successful integration requires university to plan and develop ICT systems around the needs of their students, teachers and their organization. Nepal Ministry of Education (2013-2017) has supported many effective projects to improve the integration of ICT in education including: the Information and Communication Technologies for Professional Development initiative for teachers; the Laptops for Lecturers, Project and Cluster programs in Nepal which are aimed at increasing teachers' ICT skills and instructive understandings of ICT, at increasing the integrating of ICT for professional and secretarial tasks in schools, universities, and at increasing the frequency and quality of ICT incorporation to support effective teaching and learning methods.

### **Research Design**

The researcher selected survey research design of the quantitative research method to fulfill the objectives of the study. The survey was conducted among 100 lectures who are teaching in M. Ed.

## Tools

A survey questionnaire form divided into three categories was considered as the data collection tool. The first section of the questionnaire form was about the attitudes of the teachers and the second section was about the skills of the teacher and the last section of form was about to know the supporting and the hindering factors in the proper implementation of the ICT tools in the higher level.

## Data Collection and Analysis Procedure

With permission from the Private/Public and Government campuses, teachers in the different department, the questionnaire was administered personally. And the responses of the respondents were considered as the data for the study. With the help of the different descriptive (frequency, mean, standard deviation) and inferential statistical (t-test and chi-square test) tools, the data collected through the survey instrument were analyzed.

## Analysis and Interpretation

**Descriptive statistics was used primarily in the study. The T-Test was used to** compare the attitudes and skills of the teachers towards the integration of the ICT in teaching learning process with respect to the teaching experience of the teachers and chi-square test was used to establish the validity of the statements.

## Attitudes of the Teachers towards the Integration of ICT in Teaching Learning Process

In order to achieve this objective, the mean score of each statement has been analyzed and presented as follows.

On the basis of the Likert five point scale, 96% of the teachers agreed with 'computer helps me to prepare for teaching'. Similarly, 94% of the teachers agreed with 'I feel ICT training is appropriate to my teaching-learning practices'. 89% of the teachers agreed with 'I think students can learn better by the use of ICT'. 93% of the teachers agreed with 'I feel comfortable using ICT as a tool in teaching and learning', but only 63% of the teachers agreed that 'The University supports lecturers and administrators in ICT Training'. In the same way, only 23 % of the teachers agreed with 'Teachers' gender differences influence use of ICT in teaching'. Only 19% of the teachers agreed with 'Most of the time the use of the ICT misleads my practices'. 91% of the teachers agreed with 'The use of ICT should be promoted from the policy level' and 94% of the teachers agreed with 'It is necessary to have some changes in the current framework of curriculum of higher level to encourage the use of ICT'.

## Skill of the Teachers in the use of ICT in Teaching Learning Process

On the basis of the survey result, 84% of the teachers said they had the skill of preparing presentation slides and 84% of the teachers were able to use e-devices like computer, printer, calculator etc. whenever they needed. 79% of the sampled teachers were found that they could use Skype, Google drive, drop box etc. but very few teachers were familiar with the maintenance of the problems on computer and testing the reliability and credibility of online sources of information. And about 76% of the teachers said they could handle internet and software to use in teaching in any subject area.

## The Hindering and the Supporting Factors in the Integration of ICT in Teaching Learning Process

To determine the hindering and supporting factors in the integration of ICT in teaching learning process, different statements related to hindering and supporting factors were given to the respondents to mark and, on the basis of their

frequencies, the factors were determined.

76% of the teachers agreed that 'Academic policy is in the leading position for the use of ICT'. 81% of the teachers found agreed with 'Economic support for the related stakeholders is essential for the proper use of ICT'. 81% of the teachers said that 'Teachers' attitudes towards ICT influence the use of ICT' but only 70% of the teachers agreed with 'Students' attitudes towards ICT influence the use of ICT. 76% of the teachers agreed that proper technical support may promote the use of ICT. In the same way, 86% of the teachers agreed with "Ratio between student and computer is good with internet facility". 78% of teachers suggest for preparing ICT friendly curriculum and proper collections of E-resources i.e. books, journals for its proper implementation.

On the other hand, 91% of the teachers expressed that lack of academic policy is one of the main hindering factors for the use of ICT whereas 83% said that lack of ICT based knowledge and competency in the faculty is hindering factor. 84% of the teachers agreed that lack of access of ICT tools is responsible to have less use whereas 77% of the teachers agreed that traditional teaching culture is also one hindering factor for the use of ICT. 73% of the teachers said proper financing conditions of institutions are hindering factors and 81% of the teachers agreed that students have lack of ICT facilities in their home and institutions.

#### Comparison of Attitudes with Respect to the Teaching Experience of the Respondents

**Table 1**

Teaching Experience	No. of Teachers	Mean	S.D.	D. F.	T-Value	Decision
≤ 10 years	58	3.8533	0.7735	98	-0.0235	>-1.96, Accept $H_0$
>10 years	42	3.859	0.8633			

The table shows that there is no significance difference between the attitudes of the teachers with respect to their teaching experience.

#### Comparison of Basic skill Of the Respondents Regarding the use of the ICTs with Respect to the Experience of the Teachers

**Table 2**

Teaching Experience	No. of Teachers	Mean	S.D.	D. F.	T-Value	Decision
≤ 10 years	58	3.7628	0.4859	98	2.0112	>1.96, Reject $H_0$
>10 years	42	3.5131	0.5517			

From the table we can conclude that, there is significance difference between the skills of the teachers with respect to their teaching experience.

### FINDINGS

The result and discussion of the study which have been presented in the previous sections suggest the following key findings:- The teachers have shown their positive attitudes towards the integration of ICTs tools in higher level for promoting the students learning. Most of the teachers were found to have the basic skills about the use of ICT tools as their medium of instruction. There is no significant difference between the attitudes of the teachers with respect to their teaching experience. There is significant difference between the skills of the teachers with respect to their teaching experience.

The supporting factors are: proper technical support promoting the use of ICT; adequate basic infrastructure like electricity, multimedia projector etc.; teachers' attitudes towards ICT; and economic support for the related stakeholders essential for the proper use of ICT. The hindering factors are: lack of academic policy, traditional teaching culture; lack of

ICT based knowledge and competency in the faculty; lack of access to ICT tools; and lack of proper financing conditions of institutions.

## CONCLUSIONS

On the basis of the findings which are presented in the previous section, some very significant conclusions can be drawn. The attitudes of the teachers suggest us to integrate the ICT tools in the higher education with the aim of promoting the learning of the students and most of the in-servicing teachers are familiar and skillful about the basic use of ICT tools as the medium of the instruction. The teaching experience of the teachers does not have any role in the attitude formation regarding the integration of ICT tools among teachers but the basic skill of the teachers about the use of the ICT tools differs on the basis of their teaching experience. This helps us to make the conclusion that even though most of the teachers have same attitudes regarding the integration of the ICT tools. The fresh or the less teaching experienced teachers are more familiar and skillful for the use of ICT tools. So, it may be very meaningful to conduct some training programmes for those who are in the same teaching field for a long time as their need. The study also suggests us to arrange proper technical, physical and financial support by making the formal plan and policy to create the environment of integrating ICT in higher level.

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